

REMARKS

Claims 1-59 are now pending in the application. Paragraph 30 of the specification has been amended to update the serial number of the U.S. Application cited therein. Claims 1, 8, 22, 27, 32 and 46 have been amended to more particularly point out and distinctly claim the invention. Support for the following amendments is found, for example, in Applicant's specification: Claims 1, 8, 22, 27, 32, and 46 at paragraphs 21 (page 10), paragraph 23 (page 11), and paragraph 33 (page 17). As such, Applicant requests entry of the amendments in Claims 1, 8, 22, 27, 32, and 46. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-32, 39 and 42-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson et al. (U.S. Pat. No. 5,126,089) in view of Madono (U.S. Pat. No. 4,584,328). Claims 33-38, 40-41 and 46-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson et al. (U.S. Pat. No. 5,126,089) hereinafter "the Johnson reference" in view of Madono (U.S. Pat. No. 4,584,328) hereinafter "the Madono reference" and further in view of Hoffman, Jr. et al. (U.S. Pat. No. 6,264,823) hereinafter "the Hoffman reference". These rejections are respectfully traversed.

Independent Claims 1, 22, and 32 from which Claims 2-21, 23-31, and 42-45 depend, have been amended to more particularly point out and claim the present invention, in particular reciting a limitation that a disintegration additive is water-soluble. Further, Claims 1, 22, and 32 recite a representative limitation that the sand, binder, and

water-soluble disintegration additive are combined to form a material for making a mold for a cast part.

With regard to Claims 1-32, 39, and 42-45, the Johnson reference in view of Madono reference does not individually or in combination disclose, suggest, or render obvious Claims 1-32, 39, and 42-45. The Johnson reference fails to disclose or suggest including a disintegration additive, and provides no motivation to do so. The Madono reference specifically teaches away from the use of a water-soluble disintegration additive that is used in a material to form a mold for casting. For example, Madono enumerates the disadvantages associated with a material for a mold that might become moist or wet, including a reduction in baked strength and an increase in casting defects. Col. 2 lines 27-31. To eliminate "these disadvantages" and to eliminate water solubility, the additives are encapsulated with a plastic so that the additive compounds "scarcely become moist, even after they are heated at the high temperatures of core baking". See Col. 2 lines 32-34 and 41-44. Claims 1, 22, and 32 recite a material for making a mold for casting that includes a starting material of a water-soluble disintegration additive, which the Madono reference explicitly teaches away from. As such, it is non-obvious to combine the Johnson reference with the Madono reference to arrive at the claimed subject matter in Claims 1-32, 39, and 42-45.

Claims 33-38, 40-41, and 46-59 also stand rejected as being obvious in light of the Johnson reference in view of the Madono reference and further in view of Hoffman reference. As described above, Claims 32 and 46 have been amended to recite a water-soluble disintegration additive incorporated into a material for making a mold. It is not obvious to combine the Johnson reference with the Madono reference because

there is no motivation to combine the water resistant additive in the Madono reference with a process that relies upon reaction with vaporized water to degrade a core material in the Johnson reference. Further, Madono teaches away from a mold formed of a water-soluble material. The Hoffman reference relates to cleaning jewelry, grocery carts, metallic brake shoes, and electronic circuit boards of rust, scale, smut, petroleum derived contaminants, oils, greases, flux, carbonization, nonmetallic coatings, corrosion, paint, and dirt for recycling or reuse. Col. 1, lines 29-34, for example. Hoffman has no teaching or suggestion to use an apparatus to form a metal part with a mold comprising sand, binder, and a water-soluble disintegration additive, as required by Claims 33-38 and 40-41. Likewise, there is no teaching or suggestion in the Hoffman reference to remove residual casting material comprising sand, binder, and a water-soluble disintegration additive, as recited in each of Claims 46-59. There is no suggestion or motivation to combine the cited references, and therefore, the claims at issue are patentably distinct over the cited references. The Examiner has not met the burden to establish a *prima facie* case of obviousness with respect to Claims 1 -59. Applicant respectfully requests the Examiner withdraw the obviousness rejection and allow Claims 1 -59.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office

Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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